CORRES CONTROL
INCOMING LTR NO

L282 RF 92

DUE
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ACTION DIST	LTR	ENC
BENJAMIN, A		
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COPP, R D		
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DAVIS, J G		
EVERED, J E	X	X
FERRERA, D W		
GOODWIN, R		
HANNI, B J		
HEALY, T J		
HILBIG, J G		
IDEKER, E H		
KERSH, J M	X	X
KIRBY, W A		
KRIEG, D		
KUESTER, A W		
LEE, E M		
MAJESTIC, J R		
MARX, G E		
MORGAN, R V		
PIZZUTO, V M		
POTTER, G L		
SANDLIN, N B		
SHEPLER, R L		
SULLIVAN, M T		
SWANSON, E R		
TALLMAN, K G		
WIEBE, J S		
WILKINSON, R B		
WILSON, J M		
YOUNG, E R		
ZANE, J O		
Nesta, S	X	X
Woods, L	X	X
Bunger, P	X	X
CORRES CONTROL	x	x
TRAFFIC		

Reviewed for Addressee
Corres. Control RFP
3-6-92 [illegible]
DATE BY

Ref Ltr #

RF-46522 (Rev 2/92)

2E801

Department of Energy

ROCKY FLATS OFFICE
P O BOX 928
GOLDEN COLORADO 80402-0928

MAR 05 1992

MAR 1992
RECEIVED
92-DOE-2541

Ms. Bonnie Lavelle
U.S. Environmental Protection Agency, Region VIII
999 18th Street, Suite 500
Denver, CO 80202-2405

000020212

Dear Ms. Lavelle.

Please find enclosed meeting minutes from the RFP Risk Assessment Technical Working Group meetings regarding environmental evaluations from April 5, 1991 to September 5, 1991. We request that you review the minutes for accuracy and that you notify DOE/RFO of any changes that are desired. Note that these minutes are informal documents and are not a requirement of th IAG.

Questions or concerns regarding the enclosed minutes should be directed to Bruce Thatcher of my staff at 966-3532.

Sincerely,

David P. Simonson
Assistant Manager
for Environmental Management

Enclosure

cc w/Enclosure:
A. Rampertaap, EM-453
F. Lockhart, ERD, RFO
R. Schassburger, ERD, RFO
B. Thatcher, ERD, RFO
J. Kersh, EG&G
S. Nesta, EG&G
L. Woods, EG&G
B. Ausmus, SMS
B. Magee, HAZWRAP

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE

A[illegible]N [illegible]ORD

Identical letters sent to the following, dated [illegible]:

Joe Schieffelin
CDH

Jeb Love
CDH

John Wegrzyn
FWS

Dave Weber
CDOW

MEETING MINUTES

Risk Assessment Technical Working Group
at Rocky Flats
April 5, 1991

- DOE take lead for this group
- Would like DOE contractors to be involved

Technical Approach to EES

Bonnie Lavelle stated SOPs will begin field work in April.

Larry Woods - Have not started work yet. Grouping OUs a function of location and schedule Initially combining OU 1, 2 and 5. Writing specifications for one contractor to perform EE in Woman Creek Drainage.

Bonnie - Phasing effort ?

Vegetation survey (OU2 work plan light on vegetation)
Soil survey
Modeling (conceptual) - simultaneous w/field observations
Initial field survey will take less than 1 week

Bonnie is concerned that EE effort is not synoptic.

Charlie Comiskey - EE work plan comments

Historical information (should be evaluated prior to work plan)
- conceptual site model
- identify data gaps

Lack of conceptual model
Work plan generic

Larry Woods - Environmental evaluation technical approach handout (reviewed).
Start with broad view
Look at critical components

Bonnie - are we looking at effects at each of these levels? Will look at bioaccummulation, etc relative to food web. Can we determine population effects only by focusing on OUs 1, 2 and 5? Reference area?

Larry - hesitant in the use of reference areas. Statistical problems with single reference area Variability may be a problem with multiple reference areas. Is low population truly due to the contaminants?

EPA - gradient approach?

Rick Roberts asked about examples of EPA-approved work plans/reports for EEs

Charlie - Work plans seemed to embrace reference area concept. Species diversity very variable in freshwater habitats Reconnaissance stage. Get basic statistical data to define variability Define Type I and II errors How many required? Will reference areas be useful? No link between nature and distribution of contaminants needs to be integrated with EE sampling stations Gradient approach should be looked in to Need a sound statistical approach

Charlie - Brief walkover will not be sufficient to define a reference area.

Larry - Variations in soil composition also important.

Charlie - Lots of information regarding quantitative impact assessment (beyond CERCLA)

Bonnie - Contaminants of concern for biota?

Larry - Will be differences between human health and ecology, heavy metals, e g., we are developing criteria.

EE contaminants of concern

Better defined for human health than ecology
EEs dependent on scientific literature
- define contaminants and concentration
- define potential sensitive species
- scientific literature

Contaminants of Concern (human health)

Rick - IAG - attachment 4 - HSL not a good starting point. QAPP - Appendix B (target chemical for laboratory analysis).

Dennis Smith - Two-step process in accordance with RAGS (1989) review handout. Reduce list via technical memoranda and minutes with EPA.

Bonnie - Scoring or weighting factors?

*****Action***** Will consider scoring. Look at dose reconstruction regarding historical releases Currently identifying chemicals. Document available in May

Sampling to validate dose reconstruction (tie to IAG)? Need to coordinate with IAG.

*****Action**** Learn more about dose reconstruction project.

*****Action***** SOPs for contaminants of concern (Randy Harris).

*****Action***** Need monthly or bi-monthly Risk Assessment Technical Working Group meetings or per technical memoranda.

Technical memoranda - document committee meetings

Technical memoranda for human health and EEs. Will try to combine EE and human health issues in a single technical memorandum Concise and to the point.

Rick - Developing RFDs or CPFs.

EPA - EPA HQ can develop

Dennis - IRIS/HEAST should suffice.

Consistency among OUs

Dennis - review handout

*****Action***** Multiple contractors for human health BRF. Single contractor for EE. Integration will be a challenge.

*****Action***** Schedule monthly meetings (initially) for risk assessment technical working group.

Risk Assessment Group

April 5, 1991

Attendees

Name	Organization	Phone
Bonnie Lavelle	EPA	294-1165
Terry Ruiter	PRC	295-1101
Jim Lavelle	EPA	294-7656
Bill Moore	EG&G/NEPA	273-6217
Larry Woods	EG&G/RPD	966-5417
Randy Harris	HAZWRAP (DOE Tech Support)	615-435-3289
Bruce Thatcher	DOE	303-966-3532
Charles Comiskey	HAZWRAP (DOE Tech Support)	615-482-1999
Dennis Smith	EG&G	966-5958
Rick Roberts	EG&G	273-6007

MEETING MINUTES

Environmental Evaluation Risk Assessment Technical Working Group
at EG&G Rocky Flats
April 11, 1991

The above-referenced meeting was held in DOE Bldg 116 and started at approximately 9 00 a m on Monday April 11, 1991 The meeting attendance sheet is included as Attachment A The HAZRAP ER group provided written comments (Attachment B) for review and comment In these comments, seven major issues were identified·

Issue 1 Consistency of the Environmental Evaluation (EE) approach across OUs

Issue 2. Structure of the EE.

Issue 3. Adequacy of Work Plan development.

Issue 4 Integration of EEWP with other OU 5 activities.

Issue 5. Approach toward use of reference and background areas.

Issue 6 Adequacy of the OU 5 risk or impact assessment.

Issue 7. Scheduling considerations.

Mr Randy Harris expressed a concern that the approaches outlined in OU2 and OU5 did not appear to be consistent. OU2 uses an ecosystem approach while OU5 uses a Risk Assessment approach.

Mr. Larry Woods stated that he preferred the ecosystem approach.

Ms. Bonnie Lavelle stated that EEs should use both approaches.

Mr. Harris expressed a concern that the data would be comparable between the OUs. Mr. Woods replied that while the two OUs used different approaches, the sampling follows set SOPs and did not feel that the difference in the write-ups would alter the sampling and data.

Mr. Harris stated that a uniform approach would be necessary for consistency.

Mr. Woods stated that one sampling contractor would be used for OUs 1, 2 and 5 and would therefore assure consistency.

Mr. Woods discussed the ecosystem approach and the relationship of systems, communities and populations as well as considerations given to T&E species and critical habitats.

Ms Lavelle expressed a concern about OU1 and the critical nature of the schedule

Mr Bill Moore stated that the OU1 Work Plan had been submitted in the fall, however, it was rather sketchy and questioned whether the two differing approaches could affect the sampling efforts

Mr Bob Gant discussed how sampling could be affected by the two sampling approaches He also explained that the ecosystem approach was usually more "qualitative" in nature and the risk approach was more "quantitative "

Mr Harris stated that the OU5 WP was easier to read than the OU2 WP He stated that the same criteria to select species and criteria must be consistent across OUs

Ms Lavelle requested a summary of the planned OU5 EE activities by Phase (i e , what will we do and what are the products for each Phase).

Mr. Woods provided the following summary of each Phase

Phase I — Preliminary site assessment to determine habitats, populations, species, preliminary food webs and sampling sites, applicable methods and literature search.

Phase II — Sampling and Analysis plan, toxicity testing plans are developed Mr. Gant recommended the use of a decision tree approach to assure defensibility of data Mr. Doug Reagan stated that treatability was included in OU5 as screening. Samples would be warehoused since other RFI/RI activities would impact the sample site. He also stated that it is difficult to distinguish between Phases and sample collection activities

Phase III — Wrap up of food web model, list of contaminants-of-concern (COCs) and final report. Ms. Lavelle asked if protective criteria would be developed in Phase III Mr. Woods stated that the report would describe the status of the system as it exists and whether or not it is influenced by contaminants. The criteria for action would be based on the evaluation. Mr. Harris asked whether a risk level was anticipated for remediation (i e. what is the environmental effect of remediation and location of the effect) Ms Lavelle stated that the Phase III report must have enough information for the EPA risk manager to determine if remediation is necessary

Bob Gant Decision tree
- determining when reference areas will be utilized
- overlay for ecosystem and risk assessment approaches
- links EE to soil, sediment, groundwater, surface water
- generalized in introduction
- generic
- may not be able to define branches until sampling has been conducted
- amount of scientific judgment will make it difficult to implement
  1) clarifier for process
  2) verifies presences of a plan

3) model for all OUs
4) results in a conclusion

Mr Woods suggested that OU5 could serve as the Model for OU1 and OU2 Work Plans If EPA/CDH could approve OU5 then the other plans could be modified Since OU1 and OU5 WPs were authored by the same people, the OU1 WP could be modified at the same time as OU5, thus alleviating some of the earlier concern about OU 1 and the schedule OUs 1, 2 and 5 have been consolidated under one sampling contractor to avoid unnecessary duplication of samples

EPA and CDH agreed to an expedited schedule for review of the EE portion of the Work Plan and stated that they would work with DOE and EG&G Rocky Flats to get the field activities started

Mr Woods asked whether a meeting should be scheduled to discuss the final EE F&S plans All agreed that a meeting similar to this meeting would be useful The following schedule was agreed upon

4/5/91	OU5 EE WP submitted to EPA/CD
5/6/91	Comments from EPA/CD
5/8/91	Risk group meeting
5/20/91	EE OU WPs from contractors to EG&G Rocky Flats
5/22/91	EE WPs submitted to DOE
5/30/91	Final OU 1, 2 and 5 EE WPs to EPA/CD
5/22 - 30/91	Final EE SOP development and submittal

Ms. Lavelle stated that EPA would rather see EG&G Rocky Flats go to the field and remain on schedule

Mr Bill Fraser stated that some data may need to be recollected but staying on schedule would be more important. He also stated that efforts by DOE and EG&G Rocky Flats to stay on schedule and to get into the field would receive favorable consideration from him

Mr Woods stated that the schedule may need to be slipped if agreement cannot be reached on the OU Work Plans

Mr Fraser stated that if extensions were required because the technical scope had been altered, then the extensions would probably be granted If extensions were needed because of the 2-month contracting delay, then extensions would probably not be granted All extensions must be evaluated carefully to determine cause

Mr Joe Schieffelin stated that CDH will give DOE more slack on taking risk of collecting EE field data if started as soon as possible. Need to start now to meet IAG schedule Delay by unavoidable technical/logistical problems more favorable than other reasons

(Note In my (L E Woods) opinion the additional meetings to approve the EE field sampling plans and species and parameter criteria constitute a change in technical scope and would merit extensions)
Mr Woods stated that an SOP outlining species and criteria selection would be complete in 2 months

Ms Lavelle asked how the DQOs and requirements outlined in the OU Phase II plans would be documented

Mr Jim Rogers stated the Quality Assurance Addenda for each OU would be revised to outline the quality requirements and DQOs This information would be developed in the Work Plan and would be summarized and outlined in the QAA EPA and CDH will be on controlled distribution and would receive the revisions

The group discussed the need for a field trip and walkover of the watershed The hike will be approximately 6 miles and will take most of the day May 21 was the date set for the field trip

The meeting adjourned at 11.45 a.m

ATTACHMENT A

MEETING ON EE WORK PLAN - OU 5

ATTENDANCE

NAME	AFFILIATION	PHONE NO.
Bruce Thatcher	U.S.DOE	(303) 966-3532
Larry Woods	EG&G RFP	(303) 966-5417
Randy Harris	HAZRAP	(615) 438-3239
Terry Ruiter	PRC	(303) 295-1101
Gary Miller	PRC	(303) 295-1101
Tom Ottensman	EG&G RFP	(303) 966-3198
Jim Rogers	SAIC	(303) 279-7242
Karen S. Lewis	EG&G	(303) 273-6005
Bill Moore	EG&G	(303) 273-6217
Bob Gant	HAZRAP/ASG	(615) 482-6601
Doug Reagan	Woodward-Clyde	(303) 740-3893
Bonnie Lavelle	EPA	(303) 294-1165
Joe Schieffelin	CDH	(303) 331-4421
Bill Fraser	EPA	(303) 294-1132

MEETING MINUTES

Environmental Evaluation Risk Assessment Technical Working Group
at EG&G Rocky Flats
May 8, 1991

The above-referenced meeting was held at DOE Rocky Flats Plant in Bldg 116 on May 8, 1991 Bruce Thatcher opened the meeting at 9 00 a m and circulated an attendance list (attached)

Patricia Corbetta (EPA) stated that Bonnie Lavelle could not attend the meeting and then summarized the events of the last group meeting It was her understanding that the EEs were to be completed in Phases:

- Phase I - a general inventory (Tasks 1 and 2).
- Phase II - assessment and toxicity, which would include identification of contaminants of concern, indicator species and potential effects (Tasks 3 through 7).
- Phase III - confirmation of ecosystem status and food web model She also stated that EPA had difficulty in determining which tasks outlined in the OU5 Work Plan corresponded to those Phases (Tasks 8 through 10).

Bill Fraser (EPA) stated that the results of the field visits were not included in the Work Plan and that EPA would like to see more detail on the specific field activities to be conducted Also wanted to reconcile two ecological approaches. OU2 (ecological) versus OU5 (toxicological)

Doug Reagan (Woodward-Clyde) stated that EEs will employ both ecological and toxicological approaches

Patricia (EPA) stated that based on the July review there was time to include additional detail in the Work Plan and the present plan read more like a plan to write a Work Plan Bill Frazer (EPA) stated that it will take 2 months to go into the field. He asked if Tasks 1 and 2 have been completed Stated that the results of the field inventory are not in the OU5 EE workplan

Doug Reagan (Woodward-Clyde) stated that there needed to be two plans· the existing plan, which provides a general overview and approach, and a detailed plan, which will be completed at the end of Phase 1 At that time the baseline will be known Once habitats are defined then food web and potential effects can be determined In summary, the detailed plan requested by EPA will be the output of Phase 1. Patricia (EPA) stated that DQOs must be included in the Work Plan

Doug (Woodward-Clyde) stated that development of DQOs would require a consensus approach Selection of indicator species focuses on those species which represent groups of species within the system Selection of indicator species will focus the Work Plan Reference areas criteria need to be developed The Risk Assessment will use a site-wide strategy outlined in Technical Memoranda

Rick Roberts (EG&G) stated that the Risk Assessment Technical Memoranda may not provide reference area criteria for EEs

Patricia (EPA) stated that the Work Plan must go as far as possible and must include as many conclusions as possible The Work Plan should at least include field survey data and the results of the literature search Rick (EG&G) stated that in most cases the Work Plans were written to accommodate schedule rather than seasonal opportunity and that field visits would not have been conclusive

Doug (Woodward-Clyde) stated that the reason conclusions were not drawn was that the interagency coordination would not have been included The EEWG must get together prior to development of conclusions

Bill Frazer (EPA) stated that DOE/EG&G should not be so constrained by the interagency coordination requirement and that the EPA doesn't mind if field visits are conducted prior to approval of the Work Plan.

Larry Woods (EG&G) stated that EG&G was constrained by the IAG as well as contractual requirements

Tom Jackson (FWS) stated that a plan to develop a plan was not needed and that by using local experts, familiar with the area, a detailed plan could be developed without extensive field visits Stated that one needs a feel for ecosystems targeting It is possible to scope areas without detailed information. What is needed is a general plan and a specific plan. Also need people familiar with the ecosystem

Andrew Archuleta (FWS) stated that a detailed FSP was needed prior to initiating field activities.

Bill Frazer (EPA) stated that the OU1 problem is hanging us up The OU2 EE work plan has been conditionally approved based on following criteria DOE is more likely to get RI report approved if we do the necessary field work and follow the Ecology SOPs

Larry (EG&G) stated that while in most cases the habitats and species are known, the contaminants of concern are not known.

Doug (Woodward-Clyde) stated that biological considerations were not a problem

Tom (FWS) agreed that while they understood the biota, toxicological implications are not known as well.

Patricia (EPA) stated that a conservative approach could be used and species and parameters could be whittled down as you go

Larry Woods (EG&G) stated that analytical suites are very expensive and should be selected carefully.

Bruce (DOE) stated that the schedule allows for some time to fill gaps in the next season

Rick Roberts (EG&G) stated that the EE assessment won't break up a drainage so data will be useful on those OUs scheduled later

Bill (EPA) stated that it didn't appear that there was disagreement but a mechanism for resolution was lacking The Risk Assessment Working Group could be used to provide guidance

Bruce (DOE) stated that Working Group-guidance will evolve in the May 21 site visit and meeting
Meredith Brogden (EG&G) stated that we now have people in the field, and the Working Group will visit the site on May 21st Merging the two groups' input could be useful She asked how work plans will be revised

Jim Rogers (SAIC) stated that a Site-wide QAPjP and document control system provides a mechanism for modifications The OU specific QAAs specify that they will be modified after the Phase I evaluation and that DQOs for EE will be incorporated at that time

Bill (EPA) stated that modifications subsequent to Phase I don't require EPA approval as long as they are involved in the process.

Patricia (EPA) stated that as long as DOE/EG&G follows the Work Plan and uses the approved SOPS, EPA is not likely to question data collection.

Bill (EPA) stated that the Work Plan is very general and there is little to criticize.

Bill Moore (EG&G) stated that we are still in Phase 1.

Bill (EPA) stated that EPA would like to see more detail.

Jeb Love (CDH) arrived late, asked if the EE is at the baseline assessment level Meredith (EG&G) answered "yes "

Mike Anderson (Weston) asked why not have a technical memorandum outlining the approach at the end of Phase I Bill (EPA) stated that since the Work Plan review is not until July, there is time to add Phase I detail

Randy Harris (Hazwrap) stated that the OU5 format was agreed to at the last meeting

Andrew Archuleta (FWS) stated that the OU5 is an umbrella; how will you start field activities? We know the effects of contaminants on selected species There needs to be more detail in the Work Plan

Doug (Woodward-Clyde) stated that phased approach was used at the Rocky Mountain Arsenal All agencies were involved and that interaction helped reduce problem areas Iterative process was used for determination of selection criteria of ecological indicators and contaminants

Bill (EPA) stated that getting started is more important than resubmittal and approval of the Work Plans Getting the RI report approved is better if you do something You can work to a "Conditionally Approved" document When will contaminants of concern be selected?

Joe Schieffelin (CDH) stated that the contaminants of concern may be more restrictive in the EE.

Doug (Woodward-Clyde) asked what method of COC selection does EPA and CDH favor

Patricia (EPA) stated that the approach should be documented and could be developed through the Working Group

Bruce (DOE) stated that if we can get concurrence on OU5, then OU1 and OU2 could be revised

Meredith (EG&G) stated that OU1 and OU2 will follow OU5 format and approach

Patricia (EPA) asked how will coordination between OU1, OU2 and OU5 be documented? What are the boundaries.

Tom Ottensman (EG&G) stated that boundaries are general and it is too early to specify distinct boundaries

Bill Moore (EG&G) stated that iterative process and changes while in the field will be cumbersome.

Patricia (EPA) stated that resubmittal of changes is not required.

Bill (EG&G) stated that the Work Plan will be revised after Phase 1.

Patricia (EPA) stated that we would like to review the plan but don't want you to stop work

Bruce (DOE) stated that DOE/EG&G are working at risk.

Tom Jackson (FWS) recommended taking large samples to accommodate newly discovered data needs. May reduce the need to go back and collect additional samples. Heavy metals and elements have long holding times.

Jim Rogers (SAIC) stated that EPA specifies holding times for samples If large volumes of samples are collected, an agreement must be reached with EPA and CDH on how data analyzed outside the holding time will be used. Exceeding holding times for samples other than those being analyzed for volatiles probably does not significantly affect quality if analyzed within a reasonable time limit.

Jeb (CDH) asked how will data be transferred to CDH? CDH has been working with Farrel Hobbs in Clean Water Act Division (CWAD) on data transfer.

Patricia (EPA) stated that OU1 EE needs revision but has been approved Changes will not require resubmittal If a concurrence letter is needed EPA can probably provide one

Meredith (EG&G) stated that OU1 will be implemented by the same contractor as OU5 using the same approach

Jeb (CDH) asked whether the models have been selected Models dictate the input needs and field sampling design The group discussed this subject and determined that the model design and sampling design were post-Phase I outputs

The group also discussed the revision of OU5 and subsequent revisions of OU1 and OU2 Comments are still being submitted and the original schedule of OU5 completion by the end of May anticipated, submittal of all comments by mid-May

Doug (Woodward-Clyde) stated that an extension is required for OU5 Patricia (EPA) stated that an extension of 1 week is not a problem

OU5 will be due on June 7. An attempt will be made to have OU1 revised at that time also

Patricia (EPA) stated that contaminants found during the CDH sampling were not found in the Work Plan
Patricia then outlined specific comments. Additional comments will follow and will be formally transmitted A summary of those comments follows

Table 9-1	Contaminants identified in CDH sampling are missing
Table 9-4	Criteria to be addressed in the May 21 meeting must be included
p 9-24	DQOs must be developed for soil, water and sediment and other EE samples. Will need a conceptual model for DQOs
p 9-25	Habitat determination approach must be added
p 9-28	Air monitoring at OU5 is requested
p 9-45	Sampling plan must be more specific
p. 9-50	Selection of reference areas must be defined, "do you plan on making comparisons?"

Doug (Woodward-Clyde) indicated that reference areas will be selected after Phase I

Tom Jackson (FWS) stated that reference areas are useful early on (Phase I) He also recommended contacting Jim Carr at Virginia Polytechnic

The meeting adjourned at 11.30 Bruce (DOE) reminded the attendees of the May 21 field trip and meeting. Bruce also advised that meeting will be very important to the overall process

5/8/91 EE Meeting OU5
with reference to 1 and 2

Name	Affiliation	Phone Number

Andrew Archuleta	U S Fish & Wildlife Service	231-5280
Tom Jackson	U S Fish & Wildlife Service	236-8180
Bruce J Bevirt	EG&G	ext 4130
Rick Roberts	EG&G	273-6007
Joe Schieffelin	CDH	331-4421
Terri Knudsen	EG&G	273-6014
Mike Anderson	Weston	980-6800
Terry Rutter	PRC	295-1101
J T Ottensman	EG&G	966-3198
Doug Reagan	Woodward-Clyde	740-3893
Bill Fraser	EPA	294-1132
Meredith Brogden	EG&G/EMAD	966-5974
Susan Buth	Woodward-Clyde	740-2787
Jim Rogers	SAIC	279-7242
Laurel Pye	WCC	740-3832
Bill Moore	EG&G/NEPA	273-6217
Larry Woods	EG&G/RPD	966-5417
Randy Hams	HAZRAP	(615) 435-3289
		FTS 355-3289
Patricia Corbetta	EPA	294-1135
Jeb Love	CDH	331-6771
Bruce Thatcher	DOE	966-3532

MEETING MINUTES

Environmental Evaluation Risk Assessment Technical Working Group
at EG&G Rocky Flats
May 21, 1991

The group completed a field trip to the Woman Creek Drainage on the morning of May 21, 1991 After the field trip the committee met in Building 116 Bruce Thatcher (DOE) opened the meeting at 1:20 p.m. and stated that the topics would be reference area and contaminants-of-concern (COC) selection. An outline of the Human Health and Environmental Evaluation COC selection criteria was passed out.

Larry Woods (EG&G) stated that a general approach to reference area selection would be used which would consider natural variability, comparability, specificity to target species, and avoidance of Type I & II errors. Reference areas are not identical to OUs and, as such, are not definitive but do aid in interpretation

Allen Crockett (Stoller) summarized the reference area selection criteria as stated in the outline

Jim Rogers (SAIC) asked if age structure of populations (i.e., small mammals) would be included in the data collection The use of age structure is useful in determining if population changes are due to contaminant effect or emigration from the area or other causes

Doug Reagan (Woodward-Clyde) stated that reference area selection and use is specified in the Natural Resource Damage Assessment guidance and should be included in the RFP EE selection process.

Bonnie Lavelle (EPA) questioned how the reference area selection process would be documented Will reference areas be selected only on the RFP?

Meredith Brogden (EG&G) stated that requirements are specified in the SOPs, which are being followed in the field.

Andrew Archuleta (FWS) asked if off-site reference areas have been eliminated. Mentioned Boulder County open-space.

Larry Woods stated that many areas may only be found on the RFP when one considers the history of the RFP Also ungrazed perched terraces may be difficult to find outside the RFP

Patty Corbetta (EPA) said that the SOPs state how selection is accomplished but not why

Larry Woods recommended that a discussion is needed in the Work Plan specifying how close and in what ways the reference areas match the operable unit area. Meredith Brogden stated that this information will be included in the RI Report

Patty Corbetta stated that we would like the opportunity to see this information before the RI Report Doug Reagan stated that this will be outlined in the Phase II report

Larry Woods stated that there isn't a Phase II deliverable scheduled

Dave Weber (Div Wildlife) suggested that off-site reference areas may be needed if, for example, there is tissue damage across the RFP due to migration of species across the site

Normie Morin (CDH) stated that we should consider off-site control for public perception

Doug Reagan stated that at the Rocky Mountain Arsenal, both on and off-post reference areas were used Also suggested use of decision trees for when reference areas are to be used.

Andrew Archuleta (FWS) asked, "Do you know if any of the reference sites are also contaminated?"

Rick Roberts (EG&G) stated that in the Human Health Risk Assessment, technical memoranda are specified; for EE there is no such schedule

Rick Roberts (EG&G) stated that TMs are not specified in the IAG for EE

Bonny Lavelle suggested that TMs would be helpful and wouldn't require negotiation in the IAG

Bruce Thatcher asked if these issues can be settled at these meetings verbally and informally and then record them in the meeting notes Patty Corbetta stated that we probably need to document the process.

Bruce Thatcher stated that we need to resolve some of the issues informally or we will be barricaded by paper Bonny Lavelle said that we will think about the informal approach

Jeb Love (CDH) stated that we will follow general guidance, add specifics such as water body type, age, class etc. as needed

Joe Schieffelin (CDH) asked when comments were wanted on the SOPs Bruce Thatcher stated that SOPs are not ready; therefore, we can't schedule that now.

Joe Schieffelin asked if we will get them soon enough to comment on Meredith Brogden stated that SOPs will be out next week and we don't expect a long review time to be required by DOE You should have time to review them before the next meeting.

Larry Woods stated that there is no need for a formal review of today's handout material Bruce Thatcher suggested that comments on the handout material, however, would be good
Andrew Archuleta asked if there are plans for deer tissue studies They are a potential human consumption pathway Dave Weber (CDOW) concurred on deer tissue studies as deer may be

consumed by humans Dennis Smith (EG&G) stated that some deer studies have been proposed for another study Bruce Thatcher suggested that are we done with reference area criteria We should move on to COC selection

Larry Woods stated that COCs for EEs may be more difficult to plan than the Human Health Risk Assessment due to the increased number of receptors and lack of literature to call upon We will start with the chemicals known to occur at the SWMU

Joe Schieffelin noted that ARARs are included in the COC selection outline ARARs are not determined until feasibility Larry Woods stated that these will be preliminary potential ARARs We need to base our analytical studies on some level to establish DQOs

Joe Schieffelin asked if there are two regulatory limits, which do you use Also stated that ARARs will not be available prior to the baseline risk assessment Allen Crockett answered that most conservative is used Larry Woods added, not in all cases We may need to debate this issue

Jeb Love stated that the drinking water standard may not be applicable because the water may not be a drinking water source Different standards for alluvium vs bedrock. If the COC diagram is for initial cuts, it looks OK Later the list can be narrowed

Allen Crockett suggested that this is almost an analyte list development process

Bonny Lavelle suggested that you may want to weigh NDS (not detected) before lowering detection limits Jeb Love stated that detection limits and levels are determined by the selected model Bruce Thatcher stated that selection process is outlined in the Natural Resource Damage Assessment guidance found in 43CFR11

Bonnie Lavelle stated that BTAG group is determining FWS COC; however, they are 2 years from developing COCs They may have some valuable information, however

Bruce Thatcher stated that the FWS is here to participate and represent the Natural Resource Damage Assessment process which parallels the RI/FS process We want the data to be useful in a Type B assessment or as needed Doug Reagan stated that the guidance outlines approach but does not identify methods Allen Crockett stated that the soil and water analyte lists outlined in the Work Plan will be much larger than those for the EE.

Jim Rogers noted that at present the QAA discusses the DQOs for the Human Health Risk Assessment The QAA will need to be modified after Phase II to assure that the DQOs will satisfy the EE requirements as well as those for the Human Health Risk Assessment

Bonny Lavelle asked how item F "solubility" will be determined and documented Allen Crockett stated that solubility is difficult to record quantitatively Gary Miller (PRC) asked how solubility would be used then Allen Crockett suggested that we were thinking of a qualitative value Larry Woods stated that since solubility is dependent upon the solvent, quantitative criteria will be difficult to develop Andrew Archuleta stated that solubility couldn't be used then
Larry Woods stated that solubility is a consideration and is useful even in qualitative terms Jeb Love stated that solubility and other similar considerations are determined by the Uptake Model selected Doug Reagan added that solubility influences bioaccumulation

Bonny Lavelle asked when will the COC and reference area selection process would be stated, and Meredith Brogden replied that this summer COC selection criteria will be completed for OU 1, 2, and 5

Jeb Love stated that OU-2 rads are a concern, and asked if absorption and particle size are being considered Dennis Smith (EG&G) stated that this is included in Appendix I of the WP

Patty Corbetta asked if the Health Dept studies have been reviewed and included in the OU WPs Bruce Thatcher replied that they have been considered to the degree possible but they are separate studies Bonny Lavelle stated that they are separate but it seems appropriate to include them. Rick Roberts stated that the studies are not similar in all cases

Patty Corbetta asked if the list of COCs could be used, if similar Meredith Brogden stated that the Human health risk assessment and EE are not entirely comparable The Health Dept COCs may not meet the EE objectives Bruce Thatcher stated that it's safe to say that we will not ignore the Health Dept studies and data

Bonny Lavelle suggested that we look at the COC criteria Bruce Thatcher stated that it is not appropriate to use the Health Dept COC and data across-the-board for EEs

Dennis Smith reviewed the COC selection criteria outlined in the Human Health Risk Assessment COC Selection Process Summary.

Dennis completed the Human Health summary at 3 45 p m

Bruce Thatcher suggested that we get the handouts distributed sooner so that the committee has more time to review them prior to the meeting

Patty Corbetta (EPA) asked why persistence is not in COCs for ecology

Patty Corbetta asked when the next meeting is scheduled

Bonnie Lavelle mentioned toxicity-concentration screening from Chapter 5 of RAGs

Larry Woods and Bruce Thatcher stated that the next meeting will be in 1 month as agreed We should divide the group into Human Health and EE All agreed and the meetings were set as follows:

Human Health	June 27	1 00 p m at EPA
Env. Eval.	June 19	1 00 p m at DOE 116

The meeting adjourned at 4 00 p m The list of the 22 attendees is attached

PARTICIPANTS

RISK ASSESSMENT TECHNICAL WORKING GROUP

NAME	AFFILIATION	PHONE #
Bruce Thatcher	WE	966-3532
Randy Hams	HAZWRAP	(FTS) 355-3289
Dave Weber	Division of Wildlife	291-7231
Rick Roberts	EG&G	273-6077
Patty Corbetta	EPA	294-1135
Cliff Franklin	DCE	966-5919
Tom Ottensman	EG&G	966-3198
Andrew Archuleta	U S Fish & Wildlife Service	231-5280
Jim Otten	HAZWRAP	(FTS) 355-3137
Bruce Bevirt	EG&G	966-4130
Doug Reagan	Woodward-Clyde	740-3893
Jeb Love	CDH	331-6771
Tom Brennan	HAZWRAP	355-3428
Gary Miller	PRC	295-1101
D Jean Tate	EBASCO	980-3564
Allen B. Crockett	S. M Stoller Corp	449-7220
Jim Rogers	SAIC	279-7242
Meredith Brogden	EG&G/EMAD	966-5974
Larry Woods	EG&G/RPD	966-5417
Joe Schieffelin	CDH	331-4421
Bonnie Lavelle	EPA	294-1165
Dennis Smith	EG&G	966-5958

MEETING MINUTES

Environmental Evaluation Risk Assessment Technical Working Group
at EG&G Rocky Flats
June 25, 1991

The Environmental Evaluation Risk Assessment Technical Working Group met at the Rocky Flats Plant Site in Building 116 on June 25, 1991 Bruce Thatcher (DOE) opened the meeting at about 1:00 p.m. An attendance sheet was circulated and is included as Attachment A.

The primary topics for this meeting were the presentation, initial review, and discussion of the preliminary approach to (1) identifying contaminants of concern (COCs) in environmental evaluations, and (2) selection of biota for chemical analysis for environmental evaluations Handouts regarding the preliminary approach to these two subjects were provided to the group by Larry Woods (EG&G). Copies of these are provided as Attachments B and C respectively The attendees briefly reviewed these handouts.

Prior to discussing the handout Bruce Thatcher (DOE) asked the group for their opinions on how best to enter the Approach to the Selection of Reference Areas into the Administrative Record (This approach was agreed to at the last Working Group Meeting, and will be used as the basis for developing an Ecology Standard Operation Procedure [SOP] for Selection of Reference Areas.) It was agreed that outputs of the working group will be mailed to EPA, CDH and natural resource trustees attached to transmittal letter.

Larry (EG&G) wondered that since the approach will form the basis for the Ecology SOP, and that the SOP will become part of the Administrative Record, if that would be sufficient

Bonnie Lavelle (EPA) stated that she would like to see the approach entered separately. That way the approach could be referenced as the basis for the methodology of selecting reference areas in the SOP. Bonnie also suggested that a statement be added to the Reference Area Selection Record, either to the cover letter or the approach itself, that states where (i e., what documentation) the selection of specific reference areas will be referenced. Larry and Bob Gant (HAZRAP) stated that reference area selection will be documented in the RI Report and indicated that a statement as such could be added to the Reference Area Selection Record.

The consensus of the group was that submitting the approach separately would be the best way to proceed. Bruce Thatcher (DOE) will submit the approach, with a cover letter, to the EPA, CDH and natural resource trustees for their review and approval.

Bonnie (EG&G) asked if candidate sites/for reference areas have been selected and if so can a map be provided that shows their locations Larry (EG&G) said that candidate sites have been selected. Bruce Bevirt (EG&G) stated that he could provide a map at the next EE Working Group Meeting

Bonnie asked about the status of documents (e g , SOPs) that have been submitted by DOE and what is now expected of the Agencies regarding these documents Bruce (DOE) stated that the Agencies should review and provide comments on new Ecology SOPs that have been submitted, and that SOPs that have been reviewed once need to be revisited to ensure that comments were adequately addressed

The preliminary approach to identifying contaminants of concern (COCs) was then discussed by the group

Jeb Love (CDH) expressed his concern regarding DOE/EG&G's apparent assumption that radionuclides don't bioaccummulate and therefore may not be included in potential COCs He does not feel CDH would accept this assumption based solely on research conducted elsewhere, and feels that Rocky Flats Plant (RFP) data needs to "speak for itself." He further stated that he was primarily concerned with potential bioaccummulation occurring in aquatic organisms, which may or may not eventually bioaccummulate into higher trophic level organisms.

Doug Reagan (Woodward-Clyde) suggested documenting how COCs are identified, and including any references that are used to select COCs This will allow the Agencies to review the specific literature that is used in the COC selection process

Bruce (DOE) asked if this Working Group would be a good forum for presenting technical literature on which investigation designs are based. Jeb and others in the group felt that this may be possible. It was decided to pursue this in later meetings.

Bonnie (EPA) suggested emphasizing site specific studies in the COC selection criteria. Bonnie also stated that COC selection criteria in work plans are not clear. Larry (EG&G) stated that this was the intent of the first criteria and suggested that this could be clarified in the criteria by referring to site-specific existing data

Jeb (CDH) advised DOE/EG&G not to ignore differences in available nutrients and flow volumes and velocities in aquatic ecosystems for potential effects to organisms Larry (EG&G) stated that they are not ignoring nutrients and are emphasizing it more in work plans. Mark Lewis (Stoller) stated that the flow regime will be the limiting factor. Bonnie (EPA) suggested that sites with similar nutrient availabilities be added to reference area selection criteria (SOP 5.13, p 16). Larry agreed to add similar nutrient availability to reference area selection criteria.

Bonnie (EPA) suggested that the following text be added to the COC criteria "As additional data become available they can be evaluated by the COC selection process " Also asked what EE results will result in a need for remediation. What are the triggers? Larry felt that this or something similar could be added to the COC criteria Mark Lewis (Stoller) then discussed and continued to answer questions concerning the proposed COC approach.

Bob (HAZRAP) asked if there is any consideration to using a strawman or conceptual approach for demonstrating the process Jeb (CDH) suggested using Woman Creek and the Interceptor Ditch as examples for testing the approach Doug (WC) said that this approach had been applied

successfully at the Rocky Mountain Arsenal Bonnie and Joe Schieffelin (CDH) agreed to submit this proposed approach to other agency people to see if, based on their experience at the Arsenal, they could foresee any shortcomings with the approach

The discussion then shifted to the preliminary approach to selecting biota for chemical analysis

Andrew Archuleta (FWS) asked about sub-lethal effects and histopathology regarding raptors

Larry (EG&G) discussed the preliminary approach to developing the proposed selection process Bonnie (EPA) and Bob (HAZRAP) felt that the discussion on pathways and how they will be used in the approach to selecting biota for analysis needed some clarification Bob further suggested that the attributes of pathways needed to be applied and their importance to the selection process discussed. Larry felt that this could be clarified in the introduction.

Bonnie (EPA) asked if there would be an attempt to determine the cause of death of fortuitous specimens. Larry (EG&G) indicated that DOE/EG&G could record the suspected cause of death in field logbooks and that they may consider storing the whole body for subsequent analysis in some cases. He expressed a concern in running tests to determine the cause of death on randomly collected dead animals There was a suggestion to do pathological examinations when the cause of death is not obvious The group consensus was that this could be considered.

Bonnie Lavelle (EPA) stated that procedures for sampling, storing and analyzing fortuitous specimens need to be specified. May only need to analyze if EE indicates potential problems.

Bob (HAZRAP) commented on the lack of SOPs for mid-size mammal collection. Larry (EG&G) pointed out that mid-size mammals will be included in the pathway analysis for selecting biota for analysis. SOPs for mid-size mammal collection will then be developed if the pathway analysis indicates the need to do so. Stated that large mammals and birds are mobile, migratory and have wide ranges relative to individual OUs

Bonnie asked how species that are important ecologically but have low populations will be sampled Larry answered that DOE/EG&G would rely on literature to address potential impacts from contamination.

Andrew Archuletta suggested that biopsy/blood sampling for raptors, which are at the top of the food chain, be considered. He stated that this is a concern of the USFWS and would like DOE/EG&G to not rule out this sampling Doug Reagan thought that great horned owl fledglings or eggs, or eggs that did not hatch, could be sampled, or possibly include owl/raptor pellet studies

Bonnie Lavelle felt that DOE/EG&G needs to consider direct effects on top of food chain, such as water or sediment based contamination. Doug Reagan felt that direct effects may be appropriate for ducks, deer, etc

Larry provided examples for clarifying the approach in response to questions from the group He also stressed that examples in the handout are intended only as examples and that other biota will be considered as well

The group felt that additional review and consideration of the two proposed approaches was necessary and the decision was made to adjourn the meeting

Topics for the next meeting to be held Friday, August 9 at 8 30 am in Building 116 include the following

Bruce Bevirt (EG&G) will provide a map showing reference area candidate sites

The Group will complete the discussion of the two topics presented in today's meeting (the selection of COC and the selection of biota for chemical analysis) The Group was asked to provide written comment on the two handouts (Attachments B and C) to Bruce Thatcher. Larry requested that comments be submitted in time for them to be reviewed prior to the August 9 meeting.

Larry Woods (EG&G) will present and discuss a matrix of the species selection process Jeb Love (CDH) will discuss the potential problems CDH has concerning the selection of aquatic sampling locations. This discussion will center on the criteria CDH feels should be considered in the selection of sampling stations.

The meeting adjourned at approximately 5.00 pm

Attachment A

Name	Affiliation	Phone Number
Bruce Thatcher	DOE	966-3532
Tom Brenner	HAZRAP	FTS-355-3428
Bob Gant	HAZRAP/ASG	(615) 482-6601
Bonnie Lavelle	EPA	294-1067
Bruce Bevirt	EG&G	966-4130
Phil Ralphs	SAIC	279-7242
Andrew Archuletta	FWS	231-5280
Doug Reagan	Woodward-Clyde	740-3893
Jeb Love	CDH	331-6771
Joe Scheiffelin	CDH	331-4421
Terri Knudsen	EG&G	273-6014
Rick Roberts	EG&G	273-6007
Mark Lewis	Stoller	449-7220
Larry Woods	EG&G	966-5417
Terry Ruiter	PRC	295-1101

MEETING MINUTES

Environmental Evaluation Risk Assessment Technical Working Group
at EG&G Rocky Flats
August 9, 1991

The EE Technical Working group met in EPA's Denver Office on August 9, 1991 The attendance list is attached

Bruce Thatcher (DOE) started the meeting at 8 45 a m with introductions of the attendees and a brief overview of the meeting's topics. The primary purpose of the meeting was to discuss EPA, CDH and USFWS comments on:

1 Approach to Preliminary Identification of Contaminants of Concern (COCs) in Environmental Evaluation
2 Selection of Biota for Chemical Analysis for Environmental Evaluations

Bonnie Lavelle (EPA) requested that, before starting on the comment discussion, the group should consider the need for a working group charter. Bonnie stated that she would be willing to draft the first version for the group's consideration. She also requested that the meeting minutes be circulated to all members after each meeting. Bonnie also stated that review of handouts and protocols, such as those referenced above, do not need formal approval of EPA.

Bruce Thatcher (DOE) stated that the minutes would be distributed He also stated that DOE would prefer some type of formal approval for documents such as the COC selection criteria due to its importance to both the EE and Human Health risk assessments. Approval of guidance is helpful.

Randy Harris (HAZWRAP) stated that previously the group discussed the use of technical memoranda. Bonnie (EPA) stated that she remembered that there were problems using the term "technical memoranda."

Larry Woods (EG&G) stated that technical memoranda are specified for Human Health only and are a level 2 document As such he was hesitant to use the term. Randy (HAZWRAP) said technical memoranda are used on other projects; they are circulated to the group for review and comment and once the comments are addressed, everyone agrees.

Bruce (DOE) stated that there needs to be a formal approval The approval may not need to be upper EPA management but at least by the technical working group reviewers (i e., CDH, EPA, CDW and FWS).

Randy (HAZWRAP) and Bonnie (EPA) discussed possible solutions to the technical memoranda issue

Bonnie (EPA) stated that she would work on the EE working group charter Bruce (DOE) stated that would be O K and that some type of technical agreements would be good

Larry (EG&G) stated that there was a letter from Mark Hestmark (EPA) establishing the EE working group that may be useful in development of a charter and also when considering the issue of TMs

Doug Reagan (Woodward-Clyde) stated that at the arsenal the working group used the meeting minutes as documentation of agreements made in the working group meetings

Randy (HAZWRAP) stated that technical issues and topics such as those to be discussed at today's meeting may not be adequately addressed in meeting minutes

Bruce (DOE) would like to see review and concurrence of the working group output

Doug (W-C) stated that at the arsenal outputs were attached to the meeting minutes and were then circulated for review

Bruce (DOE) suggested that the group address comments of selection of COCs and also stated that chemicals of concern would be a subset of a much larger list of chemicals which would be evaluated

Bonnie (EPA) stated that the criteria seemed to be a subset and about what they anticipated She asked how COCs that bioaccumulate will be addressed, i e , the decision process of determining effects and decision tree of tissue sample selection and how they will be used to determine effect

Larry (EG&G) stated that the position paper outlines a subset of COCs

- o Those to be analyzed in destructive sampling
- o Those for non-destructive sampling such as population size, biomass, deformities (visual observation)

Larry stated that there are two logic paths

Doug (W-C) stated that it is a hierarchial approach determining direct and indirect effects. Andrew Archuleta (FWS) asked if an overall process would be outlined

Bonnie (EPA) suggested that the group should go through the comments since EPA's first comment dealt with this issue. Bonnie read EPA's first comment which requested clarification on whether tissue sampling will be limited to COCs which bioaccumulate or all COCs. Stated that EPA is interested in direct effects also Asked how DOE will deal with direct effects in selection criteria

Larry (EG&G) stated that destructive sampling may be required for analyses above and beyond those specifically related to bioaccumulative chemicals. For example, sampling to determine biochemical pathways, tissue analysis of abnormalities, and physiological responses such as acetylcholinesterase Will consider both bioaccumulation and direct effects

Doug Reagen (W-C) stated that we should look at all effects with regard to home range, there is a problem with a percentage of an OU in a home range and with a percentage in other nearby OUs EPA and FWS do not want to ignore species with large home range. DOE will concentrate on species with small home range

Bonnie (EPA) summarized an EPA comment from page 1, last paragraph, item #2 which addressed selection of taxa based on home range size

Allen Crockett (S M Stoller) discussed OU sampling and selection of taxa Field activities for OUs have been combined to address need for expanded study area.

Larry (EPA) stated that while range is considered in the selection of species for tissue analysis, other species with large home ranges will be evaluated if appropriate.

A group discussion addressed the benefits and risks of using home range in the selection of indicator species for tissue analysis.
Jim Rogers (SAIC) pointed out that there appeared to be some confusion in terminology Home range was proposed as consideration for indicator species selection for tissue samples while indicators for EE evaluation may include species of wider home range. Range would need to be considered in the exposure analysis. The percentage of time exposed would need to be considered

Allen (S M Stoller) explained that data collected for small home range species can be used to model and evaluate risk to higher trophic levels and wider ranging species. For example, small mammals can be evaluated and the data used to model potential effects on carnivores.

Doug (W-C) agreed and stated that the approach was used at the Arsenal

Allen (S.M. Stoller)· For example, at the arsenal prairie dog studies indicated potential pathway to Bald Eagles Therefore, the prairie dog removal program was an attempt to remove the potential for exposure to eagles

Bonnie (EPA) stated that the approach seemed logical but may need elaboration in the protocol Bonnie also stated that she understood that the OUs were administrative boundaries but wondered if the EE could look at a wider picture and then be broken out for the specific OU reports

Larry (EG&G) stated that distinct boundaries had not been established in most cases by either DOE or the IAG.

Bonnie (EG&G) asked how cumulative effects were going to be addressed Larry (EG&G) stated that each OU will be evaluated and then the entire site could be addressed for cumulative effects Bruce (DOE) stated that DOE is going to do a comprehensive risk assessment including cumulative effects

Bonnie (EPA) asked if any thought had been given to combining OUs.

Larry (EG&G) stated that the same field contractors would be used for OUs 1, 2 and 5 so this was being considered where possible Schedule and funding must also be considered It may be logical to combine OUs if the report deliverables and funding allow consolidation.

Bruce (DOE) stated that we also must consider the abiotic sampling process

Bonnie (EPA) asked if the EE can be looked at by drainage

Michael Guillaume (EG&G) stated that we must address the OU and the discussion was getting away from the IAG-defined units

Larry (EG&G) stated that the OUs had been combined where possible in time and space with one subcontractor for each area.

Mark Lewis (S M. Stoller) stated that OUs 5 and 6 will ultimately look at the results from all OUs.

Larry (EG&G) stated that the use of the ecosystem approach has been used at the site to address the very questions raised by EPA The approach addresses a wide array of concerns both direct and indirect.

Bonnie (EPA) summarized the next comment which was on page 3, third paragraph which stated that lung tissue needed to be analyzed for mammals which have potential to be exposed to radionuclides A table showing how much tissue would be required would also be useful

Andrew Archuleta (FWS) stated that a QA plan for priority ranking of tissue analyses is needed for cases where mass is limited.

Jim Rogers (SAIC) stated that once species for tissue analysis have been selected, the Quality Assurance Addendum for that work plan would be revised to include sample volume as well preservation, container and holding time requirements. Examples of the types of tables which can be expected can be found in the QM for the physical media sampling program.

Terry Ruiter (PRC) summarized the general comment on the OU work plans which expressed a concern that the identified species represent species indicative of disturbed areas and is biased in that direction. The species do not meet this selection criteria

Allen Crockett (S.M. Stoller) stated that the species lists in the existing OUs are out of date They do not meet this selection criteria because it was not in place at the time the OU Work Plans were written. The present lists were examples not final or even preliminary lists. Terry (PRC) stated that it may be better to not include example lists

Doug (W-C) stated that when considering species selection process, all species are considered and through the selection process one works down to potential indicators Species indicative of disturbance areas may predominate a listing in many cases because that may be the only habitat type in the OU If these species are the dominant species they then constitute the greatest potential pathway in many cases

Allen (S M Stoller) agreed that the EEs have progressed beyond the original lists of species

Bonnie (EPA) stated that it appeared that the EE teams and EG&G were well ahead of EPA and would like a review of submissions to date

Larry (EG&G) stated that so far OU 1, 2 and 5 had been submitted and drafts of OU 3 and 6 were in preparation The SOPs had also been submitted Larry stated that the first RI report was due within 12 months and the schedule required development of the plans well ahead of EPA submission The purpose of the technical working group meetings was to provide EPA with updates of EE progress on an iterative basis

Bonnie (EPA) stated that the rest of the comments were self explanatory and suggested moving to the other cementers

Andrew Archuleta (FWS) stated that the FWS was interested in all environmental contaminants, not just "chemicals " Would other contaminants such as metals and radionuclides be considered?

Larry (EG&G) stated that the term "chemicals" was intended to included all contaminants including metals and radionuclides, and that he was open to suggestions for a better terminology

Andrew (FWS) stated that many of their comments had been addressed in the EPA discussion He asked how a particular taxa's importance to the overall function of the ecosystem or their importance to critical habitats will be determined.

Larry (EG&G) stated that the protocol was intended to allow professional evaluation of these criteria He stated that such factors as·

Importance as a key component of primary production
Sensitive or important areas such as riparian areas or seeps
Species known to be key predators or herbivores critical to maintenance of the community structure

Andrew (FWS) stated that some taxa are known accumulators and may provide good indicators He would like to make sure that they are considered in the process

Larry (EG&G) agreed that they should be considered

Andrew (FWS) stated that he would like to see the selection criteria. Andrew stated that Bonnie's questions and the discussion addressed his concern on the next question. (Dealt with the need for tissue sampling for COCs that do not bioaccumulate and the discussion of other needs such as histopathic and physiochemical needs) Andrew also stated that migratory birds should not be excluded from consideration.

Bruce (DOE) stated that migratory birds were to be considered and inclusion of the FWS in the technical working group was the first step in their consideration DOE welcomes the FWS as the trustee for migratory waterfowl

Andrew (FWS) asked how food web analysis will be used in selection of species for tissue analysis Larry (EG&G) replied that the food web will be used to determine indicator taxon and COCs will be used to determine if tissue sampling is required

Allen (S M Stoller) stated that we will also be looking at whether a predator consumes whole bodies and/or eviscerates its prey. We may look at selected organs, such as liver, in upper levels

Jean (W-C) stated that the type of tissue sampling required depends on the specie's trophic level

Andrew (FWS) stated that the selection process and logic is not clear in the work plans

Bonnie (EPA) asked if the group would be briefed on the food web

Doug (W-C) stated that the group should look at all of the species It is probably best to conduct a preliminary selection and present the results to the group for comment and agreement

Andrew (FWS) stated that plant parts, such as roots, are also important Andrew asked how fortuitous samples will be handled. Larry (EG&G) stated that fortuitous samples will be recorded and collected if appropriate.

Jeb (CDH) asked if dead animals were the exception rather than the rule.

Doug (W-C) stated that collection wouldn't be a problem A protocol would be needed for fortuitous sampling.

Jim (SAIC) stated that fortuitous samples cannot be included in the field survey data but must be treated separately as fortuitous samples

The group completed discussion on selection criteria for species of concern and began the discussion on preliminary identification of contaminants of concern in EEs.

Bonnie (EPA) stated that a scoring system for selection of COCs would be useful Chemical properties and toxicity information could be used in the ranking Ecotox, extent of contamination, and other considerations could be weighted based on hazard and confidence Bonnie also asked if all criteria (occurrence, ecotox and extent of contamination) must exist for a COC to be selected and she expressed the concern that effects may be missed if all contaminants are not looked at.

Doug (W-C) stated that while all contaminants will be considered in the preliminary evaluations, detailed analysis on all contaminants may not be practical

Bonnie (EPA) asked if the Background Geotechnical Data Report would be considered in the evaluations

Larry (EG&G) stated that the literature review would consider all applicable sources of information including information currently being gathered for other studies and reports For example, the NEPA group is currently establishing baseline conditions which will be useful

Bonnie (EPA) asked for definition of "widely distributed" on page 3, first bullet

Larry (EG&G) replied "5 acres or more," we will not consider contaminants deeper than 20 feet as ecologically available

Bruce (DOE) stated that we will look at groundwater and future conditions and potential for ecosystem availability.

Larry (EG&G) stated that we will certainly look at potential for ecological availability of contaminated groundwater. Rooted depth is not expected to exceed 20 feet and will be considered in the pathway analysis.

Randy (HAZWRAP) stated that irrigation is often considered as a pathway and Jeb (CDH) stated that groundwater consumption is a significant pathway.

Bruce (DOE) stated that additional weirs have been placed in the drainages to characterize groundwater discharges and seeps.

Jeb (CDH) stated that physical media modeling will be important component of the EE.

Doug (W-C) said that the EEs will address current and future extent of contamination. Bruce (DOE) added that a COC list should be developed for present and future conditions.

Doug (W-C) stated that the hydrology is an important part of the fate\transport model. A biosphere must be developed for evaluation.

Andrew (FWS) suggested that all contaminants should be considered in the COC collection . Ecotoxicity as well as other responses should be considered in the selection process.

Doug (W-C) said that the guidance for EE and NRDA give little guidance on the criteria to be used in COC selection. We must look at population effects except when we are looking at T&E species, there we are concerned about individuals. Note: discussion of carcinogenity effects which are individual risk based rather than population based.)

Andrew (FWS) stated that our comment #3 was addressed in Bonnie's comment. He asked what the definition is of an ecologically sensitive area. Larry (EG&G) said that guidance will be developed in this area.

Andrew (FWS) asked how additional factors will be used to determine COCs. Doug (W-C) answered that many factors may be considered depending on the contaminant and specific population being considered. It is very difficult to anticipate all additional factors which might be used

Allen (S M Stoller) stated that we hesitate to place numeric values on selection criteria If we use 5 as a lower level what about values at 495 that may have other factors which may require consideration

Bonnie (EPA) asked if values for each of the parameters could be given Andrew (FWS) asked if the process for establishing those values could also be outlined

Jim (SAIC) stated that it is very difficult to list a numeric value to be used in the preliminary evaluations Physical properties can be listed but the synergistic and antagonistic effects of other factors add a level of complexity that cannot easily be handled in a simple table of numeric values.

Doug (W-C) suggested that a checklist of selection criteria might be more useful

Allen (S. M. Stoller) stated that physical properties and numeric values are important only if used to modify the COC list. If they are used, then how and why they are used should be discussed

Bonnie (EPA) asked how the process will be documented.

Michael (EG&G) stated that the process is specific to the EE, the site and the population

Jeb (CDH) stated that the first step is scoping out parameters until a list of contaminants and a list of receptors is established. This is a difficult process.

Michael (EG&G) asked Bonnie what she suggests we use as the basis for the table of numeric values to be considered in the selection process.

Bonnie (EPA) answered that she's looking more for the rationale something numeric. She thinks we need a listing of the selection criteria

Allen (S M. Stoller) asked if a listing of physical properties of the COCs would be appropriate

Bonnie (EPA) said that that might be useful.

Jeb (CDH) stated that in the fate and transport you will need physical properties. He asked at what level fate and transport would be addressed. Larry (EG&G) replied that fate and transport will be considered in both the EE and Human Health assessments.

Larry Woods passed out a revised version of the selection criteria for target biota. Allen (S M Stoller) and Jean (W-C) presented briefing on field operations

Jeb Love made a presentation on stream sampling location selection considerations

The group agreed to meet on September 5th at 8 30 a m at a location to be announced in the meeting notice letter

RISK ASSESSMENT TECHNICAL WORKING GROUP
ECOLOGY

August 9, 1991

NAME	ORGANIZATION/COMPANY	PHONE
Jim Rogers	SAIC	279-7242
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Jeb Love	CDH	331-6771
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Mark Lewis	S.M. Stoller	449-7220
Allen Crockett	S.M. Stoller	449-7220

MEETING MINUTES

Environmental Evaluation Risk Assessment Technical Working Group
at EG&G Rocky Flats
September 5, 1991

Prior to the meeting start the following materials were passed out to the working group

Table 1	Criteria for Selecting Taxa as Assessment and Nondestructive Measurement Endpoints (OU1)
Table 2.	Criteria for Selecting Taxa as Destructive Measurement Endpoints (OU1)
Table 1	Criteria for Selecting Taxa as Assessment and Non-destructive Measurement Endpoints (OU2)
Table 2.	Criteria for Selecting Taxa as Destructive Measurement Endpoints (OU2)
Table A.	Preliminary Identification of Contaminants of Concern (COCs) for Biota at Operable Unit 1 (OU1)
Table A	Selection Matrix for Contaminants of Concern (OU2)

Modifications to the Contaminants of Concern (COCs) selection criteria September 5, 1991.

Approach to preliminary identification of Contaminants of Concern (COCs) in Environmental Evaluations -

Species Lists for the Rocky Flats Plant Site - Plants, Fish, Amphibians, Birds, Mammals

Selection Criteria for Target Biota Taxa for Environmental Evaluations at Rocky Flats Plant

Process for the Selection of COCs and Target Taxa

Bruce Thatcher (DOE) started the meeting at 8 45 a m. The attendance list and handout material is attached.

Larry Woods (EG&G) asked if Meredith Brogden (EG&G) would discuss Table A. Preliminary Identification of COCs for Biota for both OUs 1 & 2. Meredith (EG&G) discussed each table and the general rationale for the process

Bonnie Lavelle (EPA) asked if contaminants above the ARAR but below background would be screened out Meredith (EG&G) stated that in most cases they would

Bonnie (EPA) requested clarification on the difference between the terms "sample area" and "sample site "

Meredith (EG&G) stated that the area refers to the OU, and sample site refers to specific sample locations, such as a specific borehole.

Larry (EG&G) asked if duplicate samples were used in the percent occurrence determination Meredith (EG&G) replied that a conservative approach was being used and they were considered in the percentage
Joe Schieffelin (CDH) requested an example of the process Jean Tate (Ebasco) used aluminum as an example and the group worked through the tables using Jean's example information

Bonnie (EPA) asked that the 20 percent distribution criteria be explained Jean (Ebasco) explained that the 20 percent distribution criteria was used to avoid having four of five hits coming from a 1 square meter area that would not be representative of conditions at the site Another example would be four out of five hits in one borehole.

Joe (CDH) asked if there was enough information and confidence in that information to complete the tables.

Larry (EG&G) stated that in many cases adequate sampling has already been completed on some OUs to provide the data required In other cases knowledge of past disposal or processes provides additional information.

Joe (CDH) suggested that he was more concerned about the landfill.

Larry (EG&G) said that the physical media and human health side would also be of concern and that EE activities will be coordinated with those data collection activities

Bruce (DOE) stated that some sites are complex and several phases of the RI many be in progress at one time or ongoing

Jean (Ebasco) stated that EE work may also be required prior to disturbance and, as such, prior to obtaining the data. For example, a borehole may be needed to get groundwater data but the actual EE data must be collected before the surface is disturbed.

Joe (CDH) commented that what you are doing is compiling a more comprehensive listing of COCs. Meredith (EG&G) stated that as the phases are completed the list is expanded.

Larry (EG&G) stated that it is possible that an EE could be completed early in an RI

Bruce (DOE) stated that while in the field temporal changes may also be identified

Terry Farmer (HAZRAP) asked how false positives were eliminated from the COC listing

Jim Rogers (SAIC) stated that analytical data is validated and field QC samples are used to eliminate or at least to identify false positives. The real problem of false positives occurs when using historic data that may come from a variety of sources This data is used for screening and, as such, has limited but valuable use

Bonnie (EPA) explained the workplans state that a ranking and scoring system will be used for selection of COCs The workplans should be revised to reflect the use of these selection tables rather than a ranking and scoring system

Jim (SAIC) stated that while the tables presented may not be entirely quantitative, they are quantitative and qualitative ranking systems Bruce (DOE) commented that they do provide qualitative ranking for selection

Jim (SAIC) stated that it does not appear that the workplans will need to be revised
Bonnie (EPA) requested that the terms "key receptor species" and "key receptor taxa" be defined

Larry (EG&G) stated that the term "species" was not always appropriate and at time entire groups or organisms, such a periphyton, are used in the EE. Therefore the term "taxa" is more appropriate and will be used

Joe (CDH) asked if the COC selection logic will be included in the workplans Larry (EG&G) explained that, as discussed in a previous meeting, a technical memorandum would be prepared adjunct to the workplans outlining the process Larry discussed the handout "Modification to the Contaminants of Concern (COCs) selection criteria 9/5/91." This revision reflects changes discussed at the last meeting and clarification A new last paragraph has been added to expand the discussion. Clarification included a discussion on individual versus populations in the ecosystem approach and that target taxa are usually populations and communities. Tables 1 and 2 for both OU 1 and 2 were introduced.

Bonnie (EPA) requested that an example be used to better outline the process.

Alan Crockett (Stoller) used the desert cottontail as an example and worked through the tables Alan discussed the use of reasonable home range and that if threatened or endangered species were present, special emphasis was placed on evaluating potential impact He also stated that community surveys are a form of non-destructive sampling.

Note: The group discussed that judgement played a large role in the selection process. The process does provide a pool of potential target taxa and COCs which must then be further reduced based on selected criteria.

Bonnie (EPA) asked if the tables and process adequately addressed the Fish and Wildlife Service's concerns for migratory birds.

Allen (Stoller) stated that in most cases migratory birds can be accommodated; however, seasonal occurrence may preclude sampling. For example, eggs and young would be sampled rather than adults that range over a large area Eggs and young were not available during the fall sampling and would need to be collected in the spring. Bruce (EG&G) asked if we are allowed to conduct destructive sampling on migratory birds

Doug Reagan (Woodward-Clyde) stated that collections and sampling could be accomplished under permit

Bruce (DOE) stated that permits should be addressed in the tables with an asterisk

Jim (SAIC) said permits are, in some cases, addressed in the plant site and EE standard operating procedures

Bruce (DOE) said we need to check on this to be sure we are in compliance

********Action******** - (Review SOPs to determine if permit needs are identified)

Larry (EG&G) said he would like to see permit issues at a higher level addressing all plant activities rather than just EE

Meredith (EG&G) stated that the EE SOPs are being integrated into other plant activities
Bruce (DOE) said the SOPs should address permits, especially those required for migratory birds .

Larry (EG&G) discussed Tables 1 and 2 and asked if there were any additional questions and if an example was needed.

Joe (CDH) stated that an example was not needed but asked what happened to the species once the table is completed - are they all evaluated?

Doug (W-C) stated that they actually go into a pool for consideration and not all will be sampled or evaluated in detail.

Meredith (EG&G) discussed the process for selection of COCs.

Bruce (DOE) asked if we need to add an asterisk by species requiring permits for collection

Jim (SAIC) stated that the need for permits may not be clear and the list will change as the EE progresses. A considerable amount of time will be expended in keeping current. One must remember that only a few of the taxa will be selected for destructive or intrusive sampling Once they are selected then the determination should be made if permits are required.

Bonnie (EPA) asked for clarification of "Target analyte" and "COC".

Note: The group discussed this topic and decided that target analyte is not synonymous with COC. They also decided that the terms "preliminary COC" and "COC" would be used Step 7 was also added to the handout "Process for the selection of COCs and Target Taxa" as follows:

Step 7. Define target analytes and sample matrices and analysis.

The term "major COCs" should be changed to "COCs "

(The meeting took a short break at 10:30 and reconvened at 10.45.)

Larry (EG&G) requested working group input on environmental pathway development

Bonnie (EPA) stated that the COCs are required to determine route and that they couldn't do much with the information they had at the time they had made previous comments

Bruce (DOE) stated that a meeting with the Human Health and EE Working group would take place at the next meeting The joint group would discuss models for exposure assessment The meeting would be more like a scoping meeting to assure that both Human Health and EE modeling data would be obtained

Bonnie (EPA) asked if Bruce wanted EPA input on model selection

Bruce (DOE) stated that he was requesting input, especially any experience that the EPA and CDH had with various models. He stated that the group would particularly like to know about specific problem areas as well as successes.

Jeb Love (CDH) discussed uncertainty as a vital part of the model and also stated that the uncertainty that is expected from a model now is more narrow and in some cases in the 5-10 percent range.

Larry (EG&G) stated that the modeling exercise does make you rigorously state your methods, assumptions and uncertainty.

The group discussed various areas of uncertainty encountered in field investigations and the importance of modeling to the EE. Bruce (DOE) stated that modeling of both physical and biological media was important to determining future conditions, with and without remediation

Bruce (DOE) stated that the date for the next meeting would be coordinated with the Human Health group and he would notify the group Bruce asked if there was a need for another meeting of the working group prior to the joint meeting.

Bonnie (EPA) stated that while they still had comments on the selection criteria, she felt that the comments could be handled by letter and another meeting was not needed Bruce stated that the meeting would be in about 6 weeks to allow for coordination and would be sometime in November.

********Action******** - Coordination with Human Health and Modelers and set meeting in November.

Bruce Bevirt (EG&G) summarized work that had been completed on toxicity assessments in Woman Creek. Bruce also listed the sample sites.

Jeb (CDH) commented that the Species List did not contain invertebrates

Jean (Ebasco) stated that a list of invertebrates and insects observed will be prepared as part of the EE. There had been some discussion about developing a reference collection of invertebrates

The meeting adjourned at 11.30 a m

RISK ASSESSMENT TASK
WORKING GROUP (ECOLOGY)
September 5, 1991

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